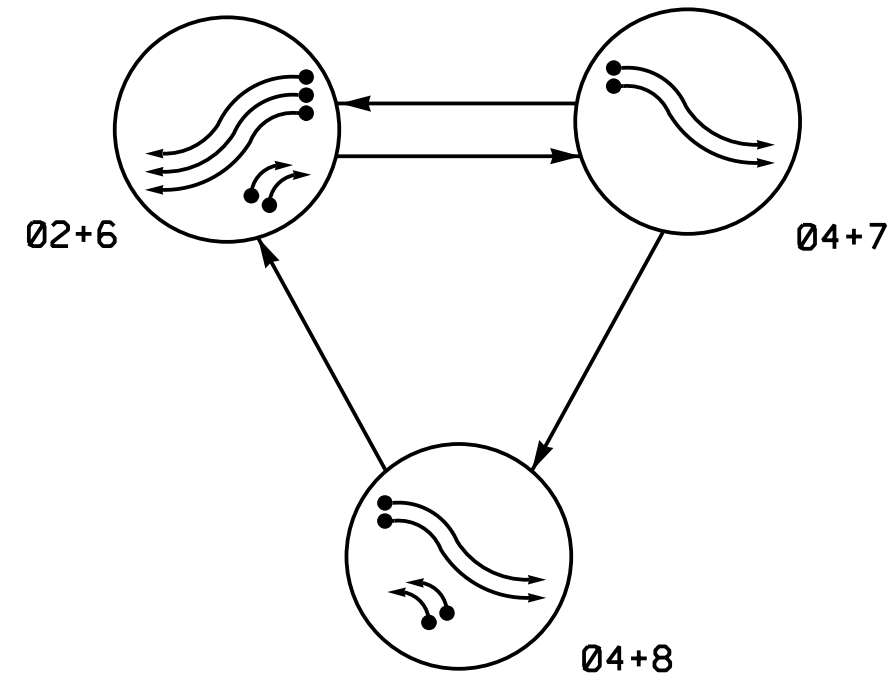


**PHASING DIAGRAM**

Program all phases for "Red Rest".



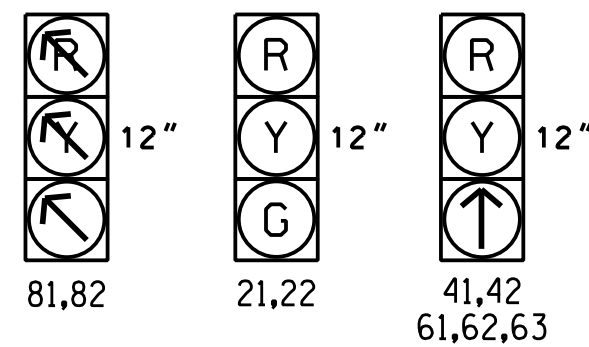
**PHASING DIAGRAM DETECTION LEGEND**

- ● DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE			
	02+6	04+7	04+8	FLASH
21,22	G	R	R	R
41,42	R	↑	↑	R
61,62,63	↑	R	R	R
81,82	R	R	R	R

**SIGNAL FACE I.D.**

All Heads L.E.D.

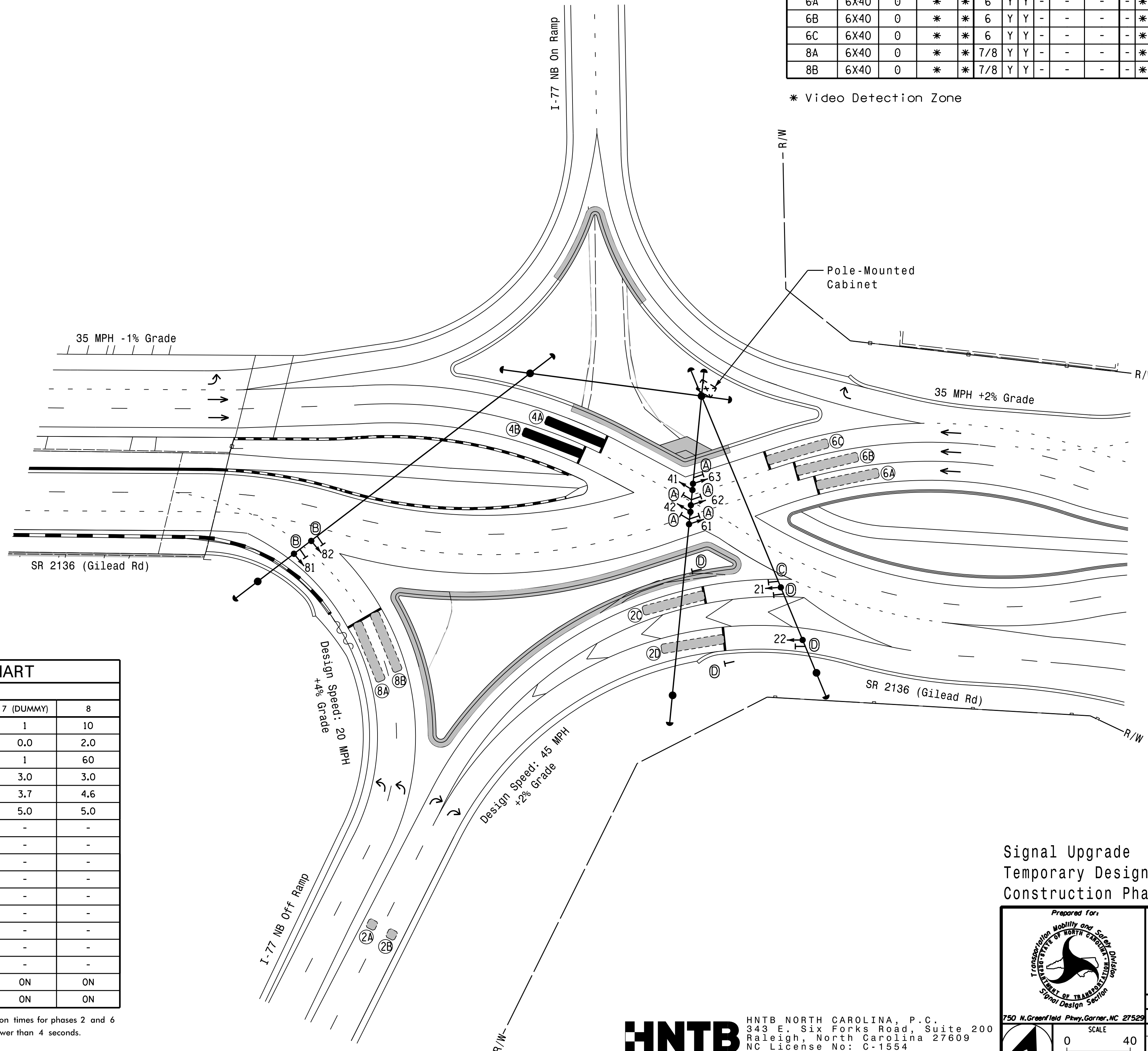


INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X6	300	*	*	2	-	Y	-	2.4	-	-	*
2B	6X6	300	*	*	2	-	Y	-	2.4	-	-	*
2C	6X40	0	*	*	2	Y	Y	-	-	-	-	*
2D	6X40	0	*	*	2	Y	Y	-	-	-	-	*
4A	6X40	0	*	*	4	Y	Y	-	-	-	-	*
4B	6X40	0	*	*	4	Y	Y	-	-	-	-	*
6A	6X40	0	*	*	6	Y	Y	-	-	-	-	*
6B	6X40	0	*	*	6	Y	Y	-	-	-	-	*
6C	6X40	0	*	*	6	Y	Y	-	-	-	-	*
8A	6X40	0	*	*	7/8	Y	Y	-	-	-	-	*
8B	6X40	0	*	*	7/8	Y	Y	-	-	-	-	*

\* Video Detection Zone

**3 Phase Fully Actuated Gilead Road Closed Loop System NOTES**

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Omit phase 8 during phase 2+6 on.
4. Program controller to clear from phase 2+6 to phase 8 by progressing through phase 7.
5. Omit phase 7 during phase 8 on.
6. Phase 7 provides red clearance time for vehicles traveling Westbound on Gilead Rd.
7. Set all detector units to presence mode.
8. Reposition existing signal heads numbered 41 and 42 and sign (A).
9. Program all phases for "Red Rest".
10. Incorporate Video Detection system for vehicle detection.
11. Provide the Engineer with the Manufacturer's approved Video Detection locations and mounting heights to obtain detection zones as shown.
12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
13. Closed loop system data: Controller Asset #1619



FEATURE	PHASE				
	2	4	6	7 (DUMMY)	8
Min Green 1 *	10	10	10	1	10
Extension 1 *	2.0	2.0	2.0	0.0	2.0
Max Green 1 *	60	60	60	1	60
Yellow Clearance	4.3	3.9	3.7	3.0	3.0
Red Clearance	1.6	3.7	1.7	3.7	4.6
Red Revert	5.0	5.0	5.0	5.0	5.0
Walk 1 *	-	-	-	-	-
Don't Walk 1	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Recall Mode	-	-	-	-	-
Vehicle Call Memory	-	-	-	-	-
Dual Entry	ON	ON	ON	ON	ON
Simultaneous Gap	ON	ON	ON	ON	ON

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

**LEGEND**

- |  |  |  |  |
|--|--|--|--|
|  | Proposed Traffic Signal Head               |  | Existing Traffic Signal Head               |
|  | Proposed Modified Signal Head              |  | Existing Modified Signal Head              |
|  | Proposed Pedestrian Signal Head            |  | Existing Pedestrian Signal Head            |
|  | Proposed Signal Pole with Guy              |  | Existing Signal Pole with Guy              |
|  | Proposed Inductive Loop Detector           |  | Existing Inductive Loop Detector           |
|  | Proposed Controller & Cabinet              |  | Existing Controller & Cabinet              |
|  | Proposed Junction Box                      |  | Existing Junction Box                      |
|  | Proposed 2-in Underground Conduit          |  | Existing 2-in Underground Conduit          |
|  | Proposed Right of Way                      |  | Existing Right of Way                      |
|  | Proposed Directional Arrow                 |  | Existing Directional Arrow                 |
|  | Proposed Video Detection Zone              |  | Existing Video Detection Zone              |
|  | Proposed Directional Drill                 |  | Existing Directional Drill                 |
|  | Proposed Wheelchair Ramp                   |  | Existing Wheelchair Ramp                   |
|  | Proposed Construction Barrier              |  | Existing Construction Barrier              |
|  | Proposed Through Arrow "ONLY" Sign (R3-5A) |  | Existing Through Arrow "ONLY" Sign (R3-5A) |
|  | Proposed Left Arrow "ONLY" Sign (R3-5L)    |  | Existing Left Arrow "ONLY" Sign (R3-5L)    |
|  | Proposed No Left Turn Sign (R3-2)          |  | Existing No Left Turn Sign (R3-2)          |
|  | Proposed "NO TURN ON RED" Sign (R10-11)    |  | Existing "NO TURN ON RED" Sign (R10-11)    |

Signal Upgrade  
Temporary Design 4  
Construction Phase V

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



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Prepared For:  
TRANSPORTATION MOBILITY AND SAFETY DIVISION  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
Signal Design Section  
750 N. Greenfield Pkwy, Garner, NC 27529

SR 2136 (Gilead Road)  
at  
I-77 NB Ramps  
Division 10 Mecklenburg Co., Huntersville  
PLAN DATE: December 2017 REVIEWED BY: A.D. Klinksiek  
PREPARED BY: A.H. Thornburg REVIEWED BY: N.R. Simmons

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 031464  
M. TASHA R. SIMMONS  
ENGINEER  
DocuSigned by:  
M. Tasha R. Simmons  
4/23/2018  
DATE

SCALE  
0 40  
1"=40'

REVISIONS  
INIT. DATE  
DATE  
SIG. INVENTORY NO. 10-1619 14